

# Development of Digital-Based Reading Materials Through Canva

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Abstract. This study aimed to identify the least mastered reading competencies in the 21st Century Literature from the Philippines and the World subject, serving as the foundation for developing digital-based reading materials using Canva. Employing a developmental research design, the study involved 153 Grade 12 Humanities and Social Sciences learners alongside nine experts tasked with evaluating the developed materials. Results indicated that the least mastered competencies included understanding Representative Texts and Authors from the Regions, utilizing Multimedia and ICT Skills for Creative Literary Adaptation, and grasping the Context and meaning of texts. Additionally, subject teachers identified areas such as inferring literary meaning, self- and peer-assessment of creative adaptations, contextualizing texts regionally and nationally, explaining the relationships between context and text, and selecting appropriate multimedia formats as the least mastered by learners. The creation of digital-based reading materials, titled "Lit Made Easy," was guided by these identified competencies. Feedback from learners highlighted their interest, perceived usefulness, and accessibility of the materials, noting their effectiveness in understanding the reading selections. Evaluation by IT experts and reading teachers deemed the digital-based materials highly acceptable.

**Keywords:** Canva application; Developmental research; Digital-based reading materials; Literature; Reading comprehension.

### 1.0 Introduction

Throughout the years, there have been significant changes in the way quality education is delivered to learners. In 21st-century education, the educational environment needs to adopt blended learning to enhance learning outcomes, particularly in the reading comprehension skills of learners. There is a long history of using technology to support learning. New technological advancements have encouraged and supported creative learning arrangements since the early 1960s. As smartphones and wireless devices become widespread, integrating technology into classrooms becomes essential. The adaptability and unobtrusive nature of modern digital tools enhance learning engagement for today's generation (Haleem et al., 2022). In recent years, the educational landscape has undergone significant transformations, particularly in the delivery of quality education. With the advent of 21st-century education, it has become imperative for schools to adopt blended learning approaches to improve student outcomes, particularly in reading comprehension. Despite these advancements, many students continue to struggle with mastering competencies in literature. This issue highlights the pressing need to integrate technology to enhance students' comprehension and engagement with the subject.

In the local context, high school students at Calinog National Comprehensive High School face challenges in mastering reading competencies in the subject "21st Century Literature from the Philippines and the World." These difficulties underscore the need for innovative teaching strategies that effectively leverage technology. Recent educational trends indicate a growing inclination among students to utilize digital tools for academic purposes. Studies by Rusmiyanto et al. (2023) and Kruk and Peterson (2020) highlight the transformative potential of technology in language learning. They emphasize how digital tools, such as interactive language apps, online platforms, digital storytelling, and virtual exchanges, provide diverse and dynamic opportunities for learners to practice and master the English language.

Despite the wealth of studies exploring the use of technology in education, there is a limited research focus on the integration of digital-based reading materials designed explicitly for literature subjects in the Philippine senior high school context. Furthermore, applications such as Canva have become a popular tool in language and literature classrooms, with 25 million academic users (Daff, 2022). Its user-friendly interface offers over 20 types of customizable media, enabling educators and students to create engaging visual content from scratch or templates using smartphones and laptops (Gehred, 2020; Nurhidayat, 2021). It has been widely adopted in education, but its potential for enhancing literature comprehension remains. This study addresses the gap by investigating the development of digital-based reading materials using Canva to address students' least mastered reading competencies.

The purpose of this study is to develop digital-based reading materials through Canva for Grade 12 Humanities and Social Sciences (HUMSS) learners at Calinog National Comprehensive High School, based on the identified deficiencies in reading competencies in the "21st Century Literature from the Philippines and the World" subject. By integrating technology and innovative design, this study aims to enhance students' critical reading skills and foster more effective learning experiences. The findings of this research will contribute to advancing educational practices and promoting the effective use of technology in literature instruction.

# 2.0 Methodology

# 2.1 Research Design

This study employed a developmental research design, which bridges theoretical frameworks and practical applications in instructional technology. Specifically, it utilized the ASSURE model, a prominent instructional design approach that includes six steps: Analyzing Learners, Stating Objectives, Selecting Instructional Methods, Media, and Materials, Utilizing Media and Materials, Requiring Learner Participation, and Evaluating the Material. This model ensures that the instructional methods and materials are effective and meet learners' needs (Zahran, 2023).

#### 2.2 Research Locale

The research was conducted at Calinog National Comprehensive High School, situated in Calinog, Iloilo, Philippines. This public secondary school is part of the 3<sup>rd</sup> District under the Schools Division of Iloilo. The school boasts comprehensive facilities that support a diverse range of learning activities, including well-equipped classrooms, a science laboratory, a computer room, and a library that caters to the needs of its students and faculty. It also provides sports facilities and open spaces for extracurricular activities, fostering a holistic educational environment. The school employs forty-three (43) permanent Senior High School faculty members who are dedicated to delivering quality education. They are supported by one (1) assistant principal and one (1) principal, ensuring effective academic and administrative management. The town's rich cultural heritage and supportive community further enhance the educational experience at Calinog National Comprehensive High School.

# 2.3 Research Participants

The research participants included 153 Grade 12 senior high school students specializing in Humanities and Social Sciences (HUMSS) at Calinog National Comprehensive High School. Data were also collected from five (5) teachers who were selected for their role in teaching the 21st Century Literature from the Philippines and the World subject. Additionally, six information technology experts and three reading teachers were chosen to evaluate the developed digital reading materials using an evaluation tool from West Visayas State University for non-print instructional materials. From the 153 students, three were selected for interviews to discuss their experiences with the digital materials created using Canva.

#### 2.4 Research Instrument

The researcher utilized four instruments for this study: (a) an adopted 30-item validated questionnaire by the Schools Division of Iloilo; (b) a Likert-type researcher-made survey questionnaire to identify the participants' least mastered reading competencies based on feedback from selected teachers; (c) an evaluation tool adapted from West Visayas State University to assess the acceptability of the digital-based reading materials created with Canva; and (d) an interview guide designed to gauge the acceptability and effectiveness of the digital-based reading materials. A panel of experts validated all instruments to ensure content and face validity. Feedback from this validation process was used to make necessary adjustments before conducting reliability testing on the instruments.

## 2.5 Data Gathering Procedure

The data collection process was divided into two stages: Data Gathering and Material Development.

Stage 1: Data Gathering: The researcher communicated with relevant individuals and authorities and, upon approval, administered a validated questionnaire and a researcher-created survey to 153 student participants and five teacher participants, respectively. Responses were tabulated and ranked to identify the least mastered reading competencies using the Most Essential Learning Competencies (MELCs) of the subject.

Stage 2: Digital-Based Reading Material Development: Using the ASSURE Model, the researcher developed instructional materials tailored to learners' interests and objectives. Digital-based reading materials were created using Canva, featuring various scripts, fonts, visual designs, and editing elements like animations and transitions. Three students were purposively selected for interviews to discuss their experiences with the materials, and nine evaluators (six ICT experts and three reading teachers) assessed the materials. Interview recordings and evaluation forms were collected and analyzed. Quantitative data were analyzed using descriptive statistics in Microsoft Excel, and qualitative data from the interviews underwent thematic analysis to identify recurring themes and patterns.

## 2.6 Ethical Considerations

This study adhered to established ethical guidelines to ensure the protection, dignity, and well-being of all participants. Participation was entirely voluntary, with respondents given the right to withdraw at any point should they feel uncomfortable. Comprehensive measures were implemented to minimize potential risks, including physical, social, and psychological harm. The confidentiality of research data was strictly upheld, safeguarding the privacy and rights of both senior high school learners and teachers. To maintain academic and scientific integrity, results were communicated accurately and responsibly, with strict adherence to antiplagiarism and ethical research practices.

## 3.0 Results and Discussion

## 3.1 Least Mastered Reading Competencies of 21st-Century Literature from the Philippines

As shown in Table 1, the least mastered reading competencies of learners in their 21st Century Literature from the Philippines and the World subject, as determined by the essential learning competencies from their achievement test results. Notably, "Representative Texts and Authors from the Regions, Item 6" ranked first (Sum = 22, Rank = 1), followed by "Multimedia and ICT Skills: Tools for Producing Creative Literary Adaptation, Item 21" (Sum = 39, Rank = 2), and "Context and Text's Meaning, Item 19" (Sum = 44, Rank = 3). These findings highlight the areas where learners struggled the most in the achievement test. These results align with previous research findings, such as those conducted by Syatriana (2019), which highlighted a persistent struggle among learners to understand English texts despite ongoing instruction, and by Jayanti (2016), who observed difficulties in comprehending English texts among learners. Conversely, the significance of reading comprehension as a fundamental skill within secondary education settings is underscored by Villanueva (2023).

Table 1. Least Mastered Reading Competencies of Learners in 21st Century Literature from the Philippines and the World Subject

Topics	Sum	Rank
Representative Texts and Authors from the Regions	22	1
Multimedia and ICT Skills: Tools for Producing Creative Literary Adaptation	39	2
Context and Text's Meaning	44	3

Note: The Least Mastered Reading Competencies were represented by the topics included in each item of the questionnaire.

The result in Table 2 revealed the reading competencies perceived by subject teachers as the least mastered by learners in the 21st Century Literature from the Philippines and the World subject, based on the essential learning competencies. Notably, these competencies ranked as follows: "Infer literary meaning from literal language based on usage" (M = 3, Rank = 1), "Do self-and/or peer-assessment of the creative adaptation of a literary text, based on rationalized criteria, prior to presentation" (M = 3.2, Rank = 2), and "Situate the text in the context of the region and the nation", "Explain the relationship of context with the text's meaning", and "Choose an appropriate multimedia format in interpreting a literary text" (M = 3.4, Rank = 3). Subject teachers identified these competencies as areas where learners have the lowest mastery.

**Table 2.** Least Mastered Reading Competencies of 21st Century Literature from the Philippines as Perceived by Subject Teachers

Most Essential Learning Competencies (MELCS)	Mean	Rank
Infer literary meaning from literal language based on usage.	3	1
Do self- and/or peer-assessment of the creative adaptation of a literary text,	3.2	2
based on rationalized criteria, prior to presentation.		
Situate the text in the context of the region and the nation.	3.4	3
Explain the relationship of context with the text's meaning.	3.4	3
Choose an appropriate multimedia format in interpreting a literary text.	3.4	3

## 3.2 Developed Digital-based Reading Materials through Canva

The results of the data analysis served as the basis for determining the content to be included in the digital-based reading materials. The content of the developed digital-based reading materials was based on the results of the test questionnaire on the least mastered reading competencies of the learner participants, as well as the results of the survey questionnaire on the least mastered reading competencies of the teacher participants in the 21st Century Literature of the Philippines and the World subject. The researcher selected the reading selections to be included in the digital-based reading materials based on the learners' top least mastered reading competencies. Furthermore, the developed digital-based reading materials comprise the following sections: preliminary pages, begin, target, try this, do this, explore, keep this in mind, sum up, apply what you have learned, reflect, and apply what you have learned glossary, and answer key. Upon the completion of the development stage of the digitalbased reading materials through Canva, which covered the least mastered reading competencies in the 21st Century Literature of the Philippines and the World subject, six (6) IT experts and three (3) reading teachers were asked to validate the digital-based reading materials in terms of its Content; Instructional Quality; Technical Quality; Presentation and Organization; Accuracy, and Up-to-Date ness of Information, and Assessment using the adopted evaluation tool of West Visayas State University for non-printed instructional materials. The results were analyzed to determine its acceptability. Moreover, three (3) learner participants were purposively chosen to use, specifically to view and read the digital-based reading materials. Then, an interview was done with the three (3) learner participants for their experiences while using the digital-based reading materials to be used for the qualitative part of the study.

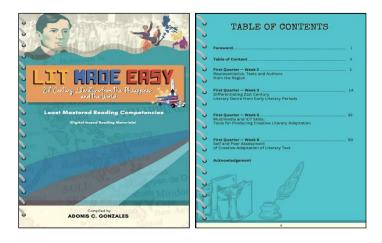


Figure 1. The preliminary pages of the digital-based reading materials (Lit Made Easy)

## 3.3 Learners' Experiences in Using Digital-Based Reading Materials Through Canva

This study involved three Grade 12 HUMSS students from Calinog National Comprehensive High School, selected from a pool of 153 learners based on their achievement test scores. Through interviews, the participants shared their experiences with digital-based reading materials. Their responses were analyzed using Thematic Analysis. To encourage open expression, they were allowed to use their native language, although they attempted to respond in English. The analysis revealed three key themes: interest and engagement, usability and accessibility, and the materials' helpfulness in enhancing understanding.

### Interest and Engagement

The learners found the digital-based reading materials engaging, especially since it was their first time using them.

Student A shared: "Yes, since all of us have gadgets, the digital materials made reading more entertaining than printed ones."

Student B said: "For me, I am more interested in reading using gadgets."

Student C added: "It successfully enhanced my interest because I can read anywhere without carrying printed materials."

The learners' experiences align with the findings of Gabor and Celeste (2024) on *Digital Reading Adventures*, which emphasize how video-based materials enhance reading comprehension. These videos make learning more engaging, enjoyable, and enriching by bringing texts to life, providing visual context, and sparking curiosity. This approach not only improves understanding but also motivates learners in ways that traditional methods often cannot. Educators widely acknowledge the benefits of incorporating videos into teaching, a sentiment echoed by the participants in this study, who shared that videos made reading comprehension easier and more enjoyable than traditional methods. Similarly, Beimers (2014) found that the interactive features of digital content significantly increase its appeal to students.

## Usability and Accessibility

Participants appreciated the ease of accessing and using digital reading materials.

Student A said: "It is easy to access through the internet and very helpful for everyone."

Student B noted: "It is convenient for those with gadgets in hand."

Student C remarked: "Using my phone makes it easier to access the materials."

These experiences align with findings by Pattuelli and Rabina (2010), who noted that digital texts are convenient for storage and portable, thereby eliminating the burden of carrying heavily printed materials. Other studies (Doering et al., 2012) emphasize that digital texts are accessible anytime, anywhere, and offer features like annotation and text copying.

## Helpfulness in Understanding

The learners found that digital-based reading materials helped them understand the content better.

Student A said: "The features of digital materials make understanding easier."

Student B commented: "They are invaluable because they are easy to access and convenient."

Student C added: "They helped me understand the material more effectively."

These insights align with research by Macedo-Rouet (2003) and Solak (2014), which demonstrate that digital reading supports better comprehension. Other studies (Demir & Akpinar, 2018) highlight how mobile learning enhances academic achievement and promotes interaction, leading to more tremendous success.

As Shown in Table 3, the experts' evaluation of the digital-based reading materials developed using Canva is summarized in Table 4. The materials were rated as "Very Acceptable" across various criteria: Content: M = 3.90, SD = 0.30, Instructional Quality: M = 3.81, SD = 0.40, Presentation: M = 3.72, SD = 0.46, Navigation/User Interface: M = 3.60, SD = 0.50, Audio/Music: M = 3.72, SD = 0.40, Technical Requirements: M = 3.69, SD = 0.47, Interactive Feedback: M = 3.80, SD = 0.40, Overall Technical Quality: M = 3.71, SD = 0.03, Presentation and Organization: "Very Acceptable", Accuracy and Up-to-Date Information: M = 3.97, SD = 0.15, Assessment: M = 3.94, SD = 0.23.

Overall, the evaluators concluded that the materials were highly effective in terms of content, instructional quality, technical features, and relevance. This suggests that digital-based reading materials serve as effective supplementary resources for addressing students' least-mastered reading competencies in 21st-century literature of the Philippines and the World.

Table 3. Experts' Evaluation of Digital-Based Reading Material Developed through Canva

	Category	SD	Mean	Description
A.	Content	0.30	3.90	Very Acceptable
B.	Instructional Quality	0.40	3.81	Very Acceptable
C.	Technical Quality	0.03	3.71	Very Acceptable
	Presentation	0.45	3.72	Very Acceptable
	Navigation/ User Interface	0.50	3.60	Very Acceptable
	Audio/ Music	0.45	3.72	Very Acceptable
	Technical Requirement	0.47	3.69	Very Acceptable
	Interactive Feedback	0.40	3.80	Very Acceptable
D.	Presentation and Organization	0.15	3.98	Very Acceptable
E.	Accuracy and Up-to-date information	0.17	3.97	Very Acceptable
F.	Assessment	0.23	3.94	Very Acceptable

**Note:** Description is based on the following scale: 3.50 - 4.00 (Very Acceptable), 2.50 - 3.49 (Acceptable), 1.50 - 2.49 (Moderately Acceptable), 1.00 - 1.49 (Barely Acceptable)

These findings align with the study conducted by Li et al. (2016), which highlights the benefits of digital learning in enhancing student performance. The researchers emphasized the importance of integrating digital tools into teaching strategies to foster engagement, encourage discussions, and promote interactive learning. This approach benefits not only students but also teachers, who gain new insights and teaching experiences through the use of digital resources.

#### 4.0 Conclusion

The Grade 12 Humanities and Social Sciences learners of Calinog National Comprehensive High School faced challenges in mastering reading comprehension in their 21st Century Literature from the Philippines and the World subject. Based on the combined results of an achievement test and teacher feedback, four reading competencies that were least mastered were identified. Although one competency overlapped between the two data sources, the other three differed. This divergence was attributed to the distinct assessment methods: the achievement test measured objective prior knowledge, while teacher feedback provided a subjective evaluation of essential competencies based on classroom experiences. To ensure comprehensive support, the researcher, with the approval of the research panel, included all four competencies in the intervention design.

To address these learning gaps, the researcher developed interactive digital reading materials titled *Lit Made Easy* using Canva. These materials featured comprehensive instructional sections, including preliminary pages, activities, assessments, reflections, and answer keys, all designed to enhance reading comprehension. The materials were meticulously evaluated by both experts and learners, who confirmed their high standards in accuracy, instructional quality, technical presentation, and relevance, with no significant revisions required.

The development and successful implementation of the *Lit Made Easy* materials demonstrated that digital resources can effectively address specific reading challenges while promoting 21st-century learning skills. The interactive design encouraged students to engage with the content actively, fostering critical thinking and self-directed learning. Beyond simply improving reading comprehension, the integration of digital technology cultivated learners' digital literacy, a crucial competency in today's information-driven society.

These findings underscore the potential of digital tools as valuable supplementary resources for literature instruction. They emphasize the importance of utilizing technology to deliver personalized, engaging learning experiences that cater to diverse learner needs. For educators, this study provides practical insights into designing and deploying digital materials to address specific learning challenges. Future studies may explore the long-term impact of digital materials on learners' overall academic performance and engagement. Investigating the effectiveness of similar interventions in other literature courses or disciplines could further validate and expand the findings of this research. Additionally, integrating adaptive learning technologies and gamified elements could be explored to create even more personalized and engaging reading experiences for students.

## 5.0 Contributions of Authors

The authors contributed equally to the development of every section of this work, ensuring a collaborative and balanced effor t throughout the research and writing process. Each author actively participated in reviewing, revising, and refining the manuscript to maintain its quality and coherence. The final version has been thoroughly reviewed and unanimously approved by all authors, signifying their collective agreement and endorsement of the work's content and conclusions.

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## 7.0 Conflict of Interests

The authors declare that they have no conflicts of interest associated with the publication of this paper. This statement affirms that no financial, personal, or professional relationships have influenced the research, authorship, or dissemination of this study, ensuring its integrity and objectivity.

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